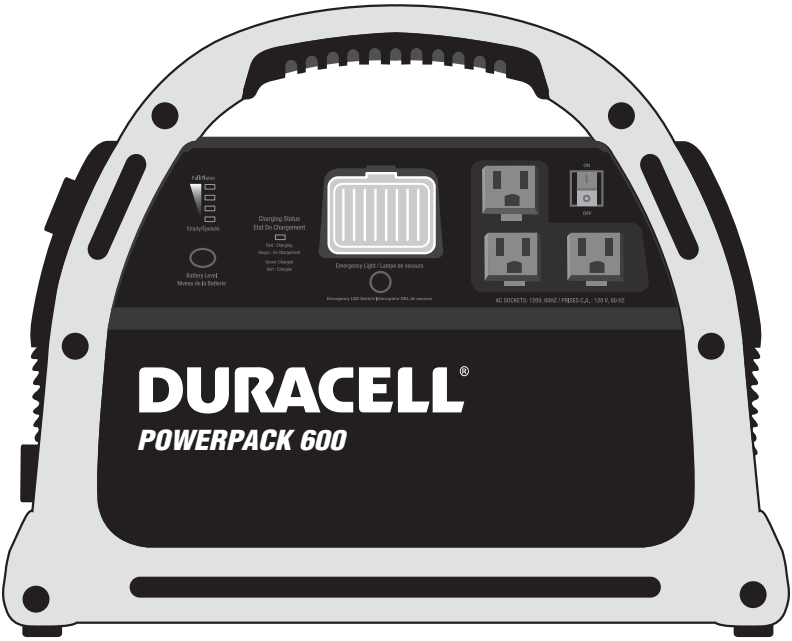
DURACELL®

POWERPACK 600



Owner's Guide

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About This Guide

Purpose

The purpose of this Owner's Guide is to provide explanations and procedures for installing,operating, maintaining, and troubleshooting the Duracell® Powerpack 600.

The Guide provides safety guidelines, detailed planning and setup information, as well as information about operating and troubleshooting the unit.

Conventions Used

The following conventions are used in this guide.

WARNING
Warnings identify conditions that could result in personal injury or loss of life.

CAUTION
Cautions identify conditions or practices that could result in damage to the product or to other equipment.

Important: These notes describe an important action item or an item that you must pay attention to.

Note: These notes describe additional information which may add to your understanding of how to use the product.

Related Information

You can find more information about Battery-Biz Inc. as well as its products and services at **www.battery-biz.com.**

Important Safety Instructions

The Duracell® Powerpack 600 generates a type of AC power similar to a normal household wall outlet. Operating the Duracell® Powerpack incorrectly or misusing it may damage the equipment or create hazardous conditions for the user.

Important: Before using your Duracell® Powerpack, be sure to read and save these safety instructions.

Warnings and Cautions

WARNING: Shock hazard.
Keep away from children.
The Duracell® Powerpack generates the same potentially lethal AC power as a normal household wall outlet. Do not insert foreign objects into the AC Outlet, the DC Power Socket, the Jump-Start Cable Port, or the ventilation holes. Do not expose this product to water, rain, snow, or spray.

WARNING: Explosion hazard
Do not use this product where there are flammable gasoline-powered boat, or near propane tanks. Do not use this product in an enclosure containing automotive-type lead acid batteries. These batteries, unlike the sealed AGM battery in Duracell® Powerpack, vent explosive hydrogen gas which can be ignited by sparks from electrical connections. When working on electrical equipment, always ensure someone is nearby to help you in an emergency.

WARNING: Heated surface

Ensure at least 2” (5 cm) air space is maintained on all sides of the Duracell® Powerpack. During operation, keep away from materials that may be affected by high temperatures such as blankets, pillows and sleeping bags.

WARNING: Fire hazard

Never allow jump-start cables’ red and black clamps to touch each other or another common metal conductor. This could cause damage to the unit and/or create a sparking/explosion hazard. Always disconnect the jump-start cables from the unit after use and clip the plastic guard over the jump-start cable port.

WARNING: Fire hazard

Jump-start cable clamps must be connected positive to positive (red clamp to battery “+”) and negative to negative (black clamp to battery “–”). A reverse polarity connection (positive to negative) may cause damage to the unit and/or create a sparking/explosion hazard.

WARNING: Fire hazard

The jump-start feature is designed for short term operation only—less than 4 seconds. Operating the Jump-start feature for more than 4 seconds may cause damage to the unit. Allow the Duracell® Powerpack to cool down for at least 3 minutes after each jump-start.

WARNING: Risk of explosion, fire or burns

The battery terminals exposed at the jump-start cable port have enough energy present to cause a spark, creating an explosion hazard, or to cause burns if a metal object contacts both terminals. Always clip the plastic guard over the port when not in use.

CAUTION
Do not connect any AC appliance with the neutral conductor connected to ground to the Duracell® Powerpack.

CAUTION
Do not expose the Duracell® Powerpack to temperatures over 40 °C (104 °F).

Precautions When Working With Batteries

WARNING: Explosion and fire hazard

1. Follow all instructions published by the battery manufacturer and the manufacturer of the equipment in which the battery is installed.
2. Make sure the area around the battery is well ventilated.
3. Never smoke or allow a spark or flame near the engine or batteries.
4. Be careful not to drop a metal object on the battery or allow a metal tool to simultaneously touch the positive and negative cable ends or battery terminals. It might spark or short-circuit the battery or other electrical parts and cause an explosion.
5. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery. A lead-acid battery produces a short-circuit current high enough to weld a ring or other similar objects to metal, causing a severe burn.
6. If you need to remove a battery, always remove the positive terminal from the battery first. Make sure all accessories are off so you don’t cause an arc.
7. Someone should be within range of your voice, or close enough to come to your aid when you work near a lead acid battery.

8. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, and eyes.
9. Wear complete eye protection and clothing protection. Avoid touching your eyes while working near batteries.
10. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters your eyes, immediately flood them with running cold water for at least twenty minutes and get medical attention immediately.

Precautions for Using Rechargeable Appliances

CAUTION
The output of the inverter is non-sinusoidal.

Most rechargeable battery-operated equipment uses a separate charger or transformer that is plugged into an AC receptacle and produces a low voltage charging output. Some chargers for rechargeable batteries can be damaged if connected to the Duracell® Powerpack.

Do not use the following with the Duracell® Powerpack with:

- Small battery-operated appliances like flash lights, razors, and night lights that can be plugged directly into an AC receptacle to recharge.
- Some chargers for battery packs used in hand power tools. These chargers display a warning label stating that dangerous voltages are present at the battery terminals.

Note: If you are unsure about using your rechargeable appliance with the Duracell® Powerpack, contact the equipment manufacturer to determine the rechargeable appliance's compatibility with the modified sine wave (non-sinusoidal) AC waveform.

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1 • Introduction

About the Duracell© Powerpack 600

Easy-to-use and designed for years of reliable service, the Duracell® Powerpack 600 can run many AC appliances and 12 V DC appliances whenever you need power for work or play, at home or on the road.

The Duracell® Powerpack:

- Powers 115 V AC appliances
- Powers 12 V DC appliances
- Powers 5 V USB devices
- Jump starts vehicle engines
- Provides lighting for emergency use

Comprehensive Protection

Automatic overload

The Duracell® Powerpack has built-in protection against output overload. If you connect to the AC outlet(s) an appliance that draws more than 480 W, or one which draws excessive surge power, the power to the AC outlet automatically shuts off.

Overheating

The Duracell® Powerpack is protected from overheating. If the inverter exceeds a safe temperature, power to the AC outlet automatically shuts off.

Low Battery Protection

Low battery protection protects the internal battery from excessive discharge and possible damage. When the AC outlet ON/OFF switch is turned on, an audible alarm alerts you when the internal battery is nearly discharged (11.0 V DC) and the unit turns off at 10.5 V DC.

Jump-Start Cables Safety Feature

The Duracell® Powerpack comes with a user-replaceable 250 A fuse to protect the unit and vehicle battery from damage through reverse polarity.

2 • Features

Chapter 2 describes the main features of the Duracell® Powerpack 600. We recommend that you familiarize yourself with these features before operating the unit.

Materials List

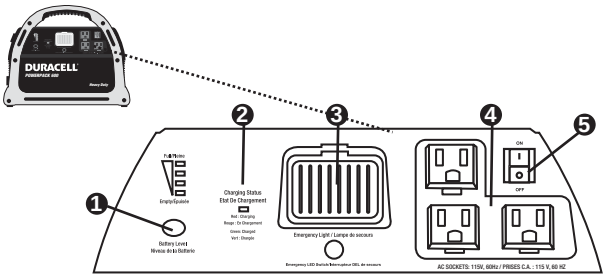
Your Duracell® Powerpack package includes these items:

- Duracell® Powerpack
- Owner's Guide
- AC charger
- DC charging cable
- Jump-start cables

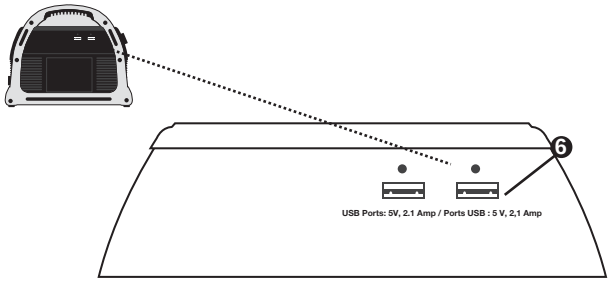
If any of these materials are missing or are unsatisfactory in any way, please contact Customer Service (see page 35).

Duracell® Powerpack 600 Features

Front Panel Detail



Back Panel Detail



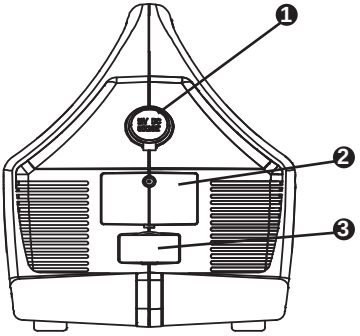
Panel Features:

Feature	Description
1	Fuel gauge button, when pressed, allows for reading Battery Charge status. For accurate reading, turn off the Powerpack, disconnect all devices, and wait 15 minutes before checking the battery charge.
2	Charging Status light illuminates when the Duracell® Powerpack is in Charging Status mode (i.e. AC Charger is connected to the inverter's Charger Input Socket and plugged into the household 115 V AC outlet).
3	LED light
4	3 AC Outlets are standard 3-prong outlets supplying 115 V AC power for running an AC appliance.
5	AC Outlet ON/OFF switch. LED next to the switch is green during normal operation.
6	2 USB Outlets that provide up to 2.1 Amps.
Not Shown	Audible Alarm (inside the unit) sounds in the event of overheating or low battery protection on inverter.

Control Panel Operation:

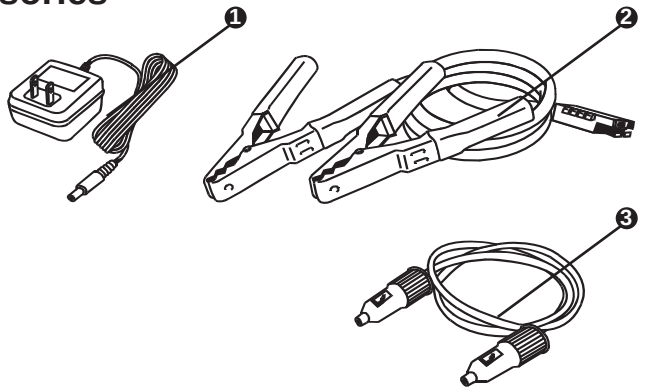
How to...	Required Condition	Required Action	Note
Monitor battery charging status	Inverter's ON/OFF switch is turned to OFF; All appliances must be disconnected from the AC and DC power outlets; The ON/OFF switch of the light must be turned to OFF; The AC charger must be plugged into the charger input socket and also into a household AC outlet.	No action required. A flashing green Charging Status light indicates that the battery in the Powerpack needs recharging and that the AC charger is charging the battery. A steady green Charging Status light indicates that the battery is fully charged and the Powerpack is ready for use.	Recharging with the supplied AC charger is a true "plug-in-and forget" charging method. We recommend leaving the AC charger connected when the Powerpack is not in use to permanently maintain the battery in fully charged condition.
Check battery charge status	Inverter's ON/OFF switch is turned to OFF; All appliances must be disconnected from the AC and DC power outlets; The ON/OFF switch of the light must be turned to OFF; The AC charger must not be plugged into the charger input socket.	Push the Fuel Gauge button. The LED Fuel Gauge will show the remaining battery capacity.	This function is disabled when the AC charger is plugged in to the charger input socket, or when the inverter switch is ON. For accurate battery charge reading, allow 15 minutes between charging/use and battery capacity check.

Left Side View



Feature	Description
1	DC Power Socket can: • Power 12 V DC auto, RV or marine appliances • Recharge Duracell® Powerpack from a 12 V outlet in a vehicle using the DC Charging Cable. ⚠ (**CAUTION:** Do not charge the Powerpack for more than 4 hours using the DC charging cable.)
2	External Replaceable Fuse is rated at 250 A, 32 V. Located behind fuse cover.
3	Jump-Start Cable Port supplies high power DC current. The cables connect to the jump-start cable port when jump-starting a vehicle or when connecting an external battery to the Duracell® Powerpack. The jump-start cable connection is designed so that the cables cannot be inserted incorrectly into the jump-start cable port.

Accessories



Feature	Description
1	AC Charger lets you recharge the Duracell® Powerpack from a standard AC wall outlet and can only be used to recharge the internal battery of the Duracell® Powerpack.
2	Detachable heavy-duty jump-start cables
3	DC Charging Cable lets you recharge the Duracell® Powerpack from a 12 V system in a car, SUV, RV or a boat.

3 • Operation

Operating Conditions and Guidelines

CAUTION
Read all operating instructions before operating the Duracell® Powerpack.

CAUTION
Do not use the Duracell® Powerpack to operate any AC appliances or 12 V DC appliances while recharging with the AC Charger. The AC Charger may fail if AC appliances or 12 V DC appliances are operated while the AC Charger is connected.

CAUTION
The Duracell® Powerpack is not intended for use as a UPS (Uninterruptible Power Supply).

Choosing a Location

WARNING: Fire or explosion
The Duracell® Powerpack contains components that tend to produce arcs or sparks. To prevent fire or explosion, do not operate the Duracell® Powerpack in compartments containing batteries or flammable materials, or in locations that require ignition-protected equipment.

The Duracell® Powerpack should be operated only in locations that meet these requirements:

Dry	Do not allow water or other liquids to drop or splash on the Duracell® Powerpack.
Cool	Ambient air temperature should be between 32 and 104ºF (0 and 40ºC) — the cooler the better within this range.
Ventilated	Leave at least 2” (5 cm) clearance around the Duracell® Powerpack for air flow. Ensure that the ventilation openings are not obstructed.
Safe	Do not operate the unit in the same compartment as batteries or in any compartment capable of storing flammable liquids like gasoline.
Protected from battery gasses	Do not operate the unit where it will be exposed to battery gases. These gases are very corrosive, and prolonged exposure will damage the Duracell® Powerpack.

Using Duracell® Powerpack 600 for the First Time

Important: Prior to operating your AC appliance or 12 V DC appliance, ensure that the battery of the Duracell® Powerpack is fully charged. If the battery has been fully discharged, recharging with the AC Charger may take up to 35 hours.

Recharging with the AC Charger

Note: The Fuel Gauge is only accurate when the Duracell® Powerpack has been disconnected from all appliances and all charging sources for 15 minutes.

Recharging with the AC charger is a true “plug-in-and forget” charging method. We recommend leaving the AC charger connected when the Duracell® Powerpack is not in use.

To recharge with the AC Charger:

1. Disconnect any 12 V DC appliances and turn the light off.
2. Turn the AC Outlet ON/OFF switch to OFF.
3. Plug the AC Charger into a standard AC wall outlet.
4. Insert the AC Charger cable end into the charger input socket (see page 6).

The green Charging Status light changes from flashing to steady when charging is complete (about 35 hours if the battery is completely discharged).

Important: The 35-hour charging time for the Duracell® Powerpack assumes that there is 120 V at the AC wall outlet. If the voltage is less than 120 V AC, it may take more than 35 hours to fully recharge the Duracell® Powerpack. If, after 35 hours of charging, the green Charging Status light is still flashing, continue to charge the unit for another 15 hours.

Important: If you keep the Duracell® Powerpack in storage, the battery will discharge over time. Remember to recharge the battery every three months to keep the Duracell® Powerpack operational.

Note: Once fully charged, the charging current automatically reduces to a maintenance charge mode, and the Duracell® Powerpack may be left permanently connected to the AC Charger.

Using the Light

The Duracell® Powerpack has a built-in light which will operate for about 50 hours before the unit needs to be recharged.

Operating AC Appliances

Understanding AC Appliances

AC appliances are rated by how much electrical power (in watts) they consume. Duracell® Powerpack can power most appliances within its continuous power rating (480 W). Some appliances may be difficult or impossible to operate from the Duracell® Powerpack. They may have high surge requirements or should not be run from the Duracell® Powerpack. See “High Surge Appliances” and Trouble Appliances” on page 13.

Run Time on Typical AC Appliances

Note: The fewer watts an AC appliance uses, the longer the Duracell® Powerpack will operate before recharging is required.

Typical AC appliances that can be used on the Duracell® Powerpack are listed in Table 3-1.

Table 3-1 AC Appliances and Run Times

AC-powered Products	Watts[a]	Run time[b]
Cordless telephone	5	31 hrs.
Clock radio	8	26 hrs
Portable stereo	10	20 hrs.
Fluorescent Work light	14	13 hrs
Portable DVD player	15	12 hrs
Video game console	20	6 hrs
Laptop computer	40	3.5 hrs.
Portable cooler	30	2.5 hrs
Table lamp	40	3.5 hrs
36” TV	133	1 hr
3/8“ drill	300	23 mins

a. Represents actual power consumption as measured on sample products.
b. Operating times assume a fully charged 26 Ah battery and may vary based on model/brand used.

Note: Wattage and run time estimates depend on appliance type and usage.

Note: Wattage noted is power drawn by appliance from AC socket.

Note: Laptop wattage is based on average usage, since a 90-Watt adapter ranges from 80W to 20W depending on battery status and usage.

High Surge Appliances

The wattage rating of AC appliances is the average power used by the appliance. Appliances such as televisions, computer monitors and appliances with motors consume much more power than their average rating when they are first switched on.

Although Duracell® Powerpack can supply momentary surge power up to 960 W, some appliances may exceed the capabilities of the Duracell® Powerpack and trigger the inverter's safety overload shutdown circuit.

Trouble Appliances

CAUTION
The output of the inverter is non-sinusoidal. Some equipment may be damaged by the inverter's modified sine wave output (non-sinusoidal).

Some appliances, including the types listed below, may be damaged if they are connected to the inverter:

- Electronics that modulate RF (radio frequency) signals on the AC line will not work and may be damaged.
- Speed controllers found in some fans, power tools, kitchen appliances, and other loads may be damaged.
- Some chargers for small rechargeable batteries can be damaged. See "Precautions for Using Rechargeable Appliances" on page vi for details.
- Metal halide arc (MHI) lights can be damaged.

Note: If you are unsure about powering any device with the inverter, contact the manufacturer of the device.

Operating Several Appliances at Once

You can run several AC appliances if the total rating of all the appliances (in watts) does not exceed 480 W. You can run appliances using an AC power bar.

Run time, however, will decrease accordingly with the number of appliances being operated and the total AC power being consumed.

Operating an AC Appliance

Before operating your AC appliance, ensure that the battery of the Duracell® Powerpack is fully charged. See “Recharging with the AC Charger” on page 22 for details.

To operate an AC appliance:

1. Turn off the AC outlet ON/OFF Switch to the ON position. The switch illuminates to indicate AC power is available at the AC outlets.
2. Plug the AC appliance into one of the AC outlets and turn the appliance on. Duracell® Powerpack will operate most devices rated up to 480 W.
3. Recharge the Duracell® Powerpack as soon as possible after each use.

When using the Duracell® Powerpack to operate an AC appliance and the low battery warning sounds, the warning gives you time to shut your AC appliance off before loss of AC power.

If you ignore the warning, the Duracell® Powerpack automatically turns off a few minutes later to prevent battery damage.

In the event of an overload, low battery voltage or overheating, the Duracell® Powerpack automatically shuts down.

Operating 12 V DC Appliances

The Duracell® Powerpack can operate 12 V DC auto, RV, marine, or other portable appliances that draw 12 A or less from a 12 V DC power outlet or from a vehicle's lighter socket.

CAUTION: Equipment damage
The DC power socket does not automatically switch off when the internal battery is discharged. To protect the internal battery against damage resulting from total discharge, we recommend that the AC outlet ON/OFF switch is turned ON when using the Duracell® Powerpack to operate a 12 V DC appliance.

Having the AC outlet ON/OFF switch turned ON enables the alarm to warn you when the 12 V DC appliance has nearly depleted the internal battery.

Note: The fewer watts a 12 V DC appliance draws, the longer the Duracell® Powerpack will operate before recharging is required.

Typical 12 V DC appliances that can be used on the Duracell® Powerpack are listed in Table 3-2.

Table 3-2 12 V DC Appliances and Run Times

12 V DC Appliance	Watts[a]	Run Time[b]
5 W LED light (built into the unit)	5	50 h
Cellular telephone[c]	6	41 h
Portable cooler	30	2.5 h

a. Represents actual power consumption as measured on sample appliances.
b. Operating times assume a fully charged 26 Ah battery and may vary based on model or brand of appliance.
c. Represents talk time available from 10 recharge cycles.

To operate a 12 V DC appliance:

1. Open the protective cover on the left side of the Duracell® Powerpack.
2. Plug the 12 V DC appliance into the DC power socket on the left side of the unit, and turn the 12 V DC appliance on (if required). If the 12 V DC appliance draws more than 12 A (or has a short-circuit defect), the internal circuit breaker of the Duracell® Powerpack shuts off the power to the 12 V DC appliance. If this occurs, unplug the 12 V DC appliance, and the internal circuit breaker automatically resets after a few seconds.
3. Fully recharge the Duracell® Powerpack as soon as possible after each use.

As the DC power socket is internally wired directly to the internal battery, extended operation of a 12 VDC appliance may result in excessive battery discharge. See Caution for “Equipment damage” on page 15.

Using the USB Ports

The USB Ports provide up to 2.1 Amps to charge USB enabled devices such as cell phones, smartphones, iPhones and iPads.

To charge USB devices:

Connect your USB device (smartphone, MP3 player, etc.) to the USB port using the USB cable supplied with your device. Charging will start and up to 2.1 Amps of current can be supplied by the port. The USB device controls the amount of current supplied. The Powerpack never “pushes” more than required by the devices.

Jump-Starting a Vehicle's Engine

You can use the Duracell® Powerpack with the supplied jump-start cables to jump-start a vehicle or boat engine that has a 12 V starting battery

WARNING: Fire hazard
Never allow red and black clamps to touch each other or another common metal conductor. This could cause damage to the unit and/or create a sparking/explosion hazard. Always disconnect the clamps from the unit after use and clip the plastic guard over the jump-start cable port.

WARNING: Fire hazard
Jump-start cable clamps' connection to the vehicle's battery terminals must be positive to positive (red clamp to battery "+") and negative to negative (black clamp to battery "–"). A reverse polarity connection (positive to negative) may cause damage to the unit and/or create a sparking/explosion hazard.

WARNING: Risk of explosion, fire or burns
The battery terminals exposed at the jump-start cable port have enough energy present to cause a spark, creating an explosion hazard, or to cause burns if a metal object contacts both terminals. Always clip the plastic guard over the port when not in use.

Important: Closely follow these instructions for jump-starting your vehicle because they may be different from the instructions supplied with other products or jump-start cables.

To jump-start a vehicle or boat engine:

1. Turn OFF the vehicle or boat ignition and all accessories.
2. Engage the park or emergency brake and place the

transmission in park for an automatic or neutral for a manual.

3. If jump-starting a boat engine, purge the engine compartment and bilge of all fumes.
4. Connect the cables to the jump-start cable port on the left side of the Duracell® Powerpack.
5. Position the Duracell® Powerpack on a flat, stable surface near the battery and away from all moving parts of the engine.
6. Connect the red positive (+) clip of the cables to the positive (+) terminal of the engine battery. The battery's positive terminal is usually larger in diameter than the negative terminal. In most vehicles, the battery's positive terminal has a red wire connected to it.
7. Connect the black negative (–) clip of the cables to the engine block, cylinder head, or other stationary heavy metal part of the motor, or to the negative (–) battery terminal. Before Powerpack and the cables are clear of belts and fans. Do not crank the engine for more than 4 seconds.
8. Remove the red positive (+) clip and then the black negative (–) clip from the vehicle's battery terminal.
9. Remove the cables from the jump-start cable port.

WARNING: Fire hazard
The jump-start feature is designed for short term operation only — less than 4 seconds. Operating the jump-start feature for more than 4 seconds may cause damage to the unit. Allow the Duracell® Powerpack to cool down for at least 3 minutes after each jumpstart.

Important: Recharge the Duracell® Powerpack as soon as possible after each use. See "Recharging the Duracell® Powerpack 600 Battery" on page 27.

Connecting to an External Battery

You can extend battery operating times by connecting the Duracell® Powerpack to a larger external battery using the jump-start cables. For example, an external 60 Ah battery gives approximately two times the operating time of the Duracell® Powerpack internal 26 Ah battery.

WARNING: Fire hazard
Never allow jump-start cables' red and black clamps to touch each other or another common metal conductor. This could cause damage to the unit and/or create a sparking/explosion hazard. Always disconnect the jump-start cables from the unit after use and clip the plastic guard over the jump-start cable port.

WARNING: Fire hazard
Jump-start cable clamps must be connected positive to positive (red clamp to battery "+") and negative to negative (black clamp to battery "–"). A reverse polarity connection (positive to negative) may cause damage to the unit and/or create a sparking/explosion hazard.

WARNING: Acid spills
Use a sealed, non-spillable battery for indoor use. Common auto and marine batteries are not suitable for indoor use unless their fumes are vented outdoors. Common auto and marine batteries contain acid, which is hazardous if spilled. Wear eye protection and protective clothing when connecting the Duracell® Powerpack to an external battery.

To connect the Duracell Powerpack to an external battery using the jump-start cables:

1. Connect the cables to the jump-start cable port on the left side of the Duracell® Powerpack.
2. Connect the red positive (+) clip of the cables to the red positive (+) terminal of the external battery.

3. Connect the black negative (–) clip of the cables to the black negative (–) terminal of the external battery.

WARNING: Sparking and explosion
Do not remove the cables from the jump-start cable port when the positive and negative clamps are connected to the terminals of the external battery.

To disconnect the cables from an external battery and from the Duracell® Powerpack:

1. To disconnect the Duracell® Powerpack from the external battery when the external battery is discharged or no longer needed, remove the red positive (+) clip, and then remove the black negative (–) clip.
2. Remove the cables from the jump-start cable port.
3. Recharge the Duracell® Powerpack as soon as possible after use.

CAUTION
Do not recharge the Duracell® Powerpack when an external battery is connected. The AC charger may be damaged.

4 • Maintenance

Chapter 4 provides information on maintaining your internal battery, recharging options for the internal battery, and replacing user-replaceable parts. Routine maintenance is required to keep your Duracell® Powerpack 600 operating properly. Occasionally clean the exterior of the unit with a damp cloth to remove the accumulated dust and dirt.

WARNING: Shock hazard
Disconnect all sources of AC power and DC power before performing any type of maintenance.

Battery Maintenance

All rechargeable batteries gradually discharge when left standing, and you need to recharge them periodically to maintain maximum battery capacity. The AC charger supplied with the Duracell® Powerpack is designed to regulate the charging process, ensuring that the battery is always fully charged but never overcharged. To ensure safe recharging and maximum battery life, recharge the Duracell® Powerpack only with the supplied charger or approved battery chargers.

CAUTION
Due to inherent self-discharge, lead acid batteries must be charged at least every 3 months, especially in a warm environment. Leaving a battery in a discharged state, or not recharging every 3 months, may result in permanent battery damage and poor jump-starting performance.

CAUTION
Do not attempt to recharge the Duracell® Powerpack battery if it is frozen. Gradually warm the frozen battery to 32 °F (0 °C) before recharging.

Recharging the Duracell® Powerpack 600 Battery

To check the battery's charge level, press the Fuel Gauge button.

Note: Battery Fuel Gauge status is only accurate when the Duracell® Powerpack has been disconnected from all appliances and all charging sources for 15 minutes.

You can recharge the battery using:

- The fully automatic "plug-in-and-forget" AC charger.
- The DC charging cable to recharge from your vehicle
- A generator equipped with a regulated 12 V battery charging outlet.
- A solar panel.

Recharging with the AC Charger

Recharging with the AC charger is a true "plug-in-and-forget" charging method.

CAUTION
Do not operate AC or DC appliances while the Duracell® Powerpack is being recharged with the AC charger. The AC charger may be permanently damaged if AC appliances or 12 V DC appliances are operated while the AC charger is connected.

To recharge with the AC charger:

1. Disconnect any 12 V DC appliance and turn the light switch to OFF.
2. Turn the AC outlet ON/OFF switch to OFF.
3. Plug the AC charger into a standard AC wall outlet.
4. Insert the AC charger cable end into the charger input socket located on the left side of the Duracell® Powerpack.

5. While the Duracell® Powerpack is recharging, the Charging Status light is flashing green. If the battery is completely discharged, a typical recharge may take up to 35 hours. When fully charged, the Charging Status light changes to steady green and the Duracell® Powerpack is ready to use.

Important: The 35-hour charging time for the Duracell® Powerpack assumes that there is 120 V at the AC wall outlet. If the voltage is less than 120 V AC, it may take more than 35 hours to fully recharge the Duracell® Powerpack. If, after 35 hours of charging, the green Charging Status light is still flashing and not steady, continue to charge the unit for another 15 hours.

Once the battery is fully charged, the charging voltage and current automatically reduces to a maintenance level and the Duracell® Powerpack may be left permanently connected to the AC charger. If your utility power is interrupted, the charging process automatically restarts when power returns.

Recharging with the DC Charging Cable

Using the DC charging cable, the Duracell® Powerpack can be recharged while you drive your vehicle.

Important: Although the charge regulation circuitry in the Duracell® Powerpack does not operate with this charging method, most vehicle voltage regulators will ensure that the Duracell® Powerpack is not overcharged. To be safe, do not charge with this method for more than 4 hours for a fully discharged Powerpack.

WARNING: Fire and explosion hazard
Do not use this recharging method if your vehicle has abnormally high voltage electrical systems that operate above 15 V DC. This may lead to accumulations of hydrogen, causing exposure to fire and explosion hazard.

CAUTION
Do not operate AC or DC appliances while the Duracell® Powerpack is being recharged with the DC charging cable from your vehicle.

To recharge the Duracell® Powerpack while you drive using the DC charging cable:

1. While the vehicle engine is running, plug one end of the DC charging cable into the DC power socket of the Duracell® Powerpack.
2. Plug the opposite end of the DC charging cable into the vehicle's lighter socket or 12 V accessory outlet.
3. Once the Duracell® Powerpack is fully charged or if your vehicle's engine is not running, disconnect the DC charging cable from both sockets. Most of the capacity will be restored in four hours while the vehicle engine is running.

Note: The Charging Status light will not illuminate when the Duracell® Powerpack is recharged through the DC charging cable.

Note: Battery Fuel Gauge indicator is only accurate when the Duracell® Powerpack has been disconnected from all appliances and all charging sources for 15 minutes.

Important: Do not leave the Duracell® Powerpack permanently connected to the vehicle's lighter socket or 12 V accessory outlet.

Recharging with a Generator's Regulated 12 V DC Outlet

WARNING: Fire and explosion hazard
The generator output must be intended for battery charging and have an output of 15 V or less. An unregulated output or one that exceeds 15 V DC can damage the battery. This may lead to accumulations of hydrogen, causing exposure to fire and explosion hazard.

Refer to the Owner's Guide accompanying your generator for detailed instructions on connecting the generator to a unit like the Duracell® Powerpack.

You can recharge the battery of the Duracell Powerpack using a generator in several ways:

- Using the AC charger to recharge the Duracell® Powerpack from a generator is possible, but would require extended generator running time.
- Using a generator which has an auxiliary regulated 12 V DC output designed for charging 12 V batteries. Most generators are equipped with them. Use this power source for faster charging.
- Using a generator with a regulated 12 V DC lighter socket. Follow the connection instructions in "Recharging with the DC Charging Cable" on page 23. Most of the capacity will be recharged in a few hours.

Note: Battery Fuel Gauge indicator is only accurate when the Duracell® Powerpack has been disconnected from all appliances and all charging sources for 15 minutes

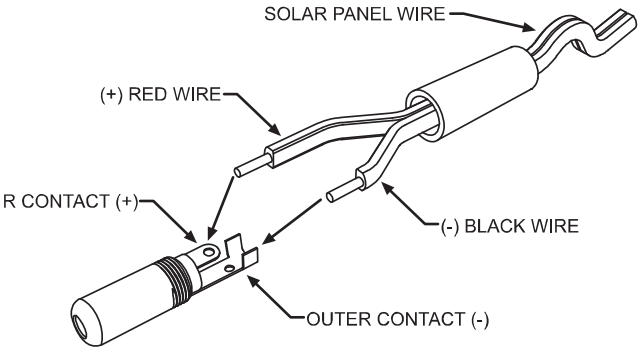
Recharging From a Solar Panel

Small, unregulated 12 V solar panels rated to produce a maximum of 2.5 A (or 30 W) can be used to charge the Duracell® Powerpack through the AC charger input socket. You will need to purchase a standard 5.5 mm OD × 2.5 mm ID (0.217” × 0.10”) coaxial DC (barrel type centre positive) connector to mate with the AC charger input socket. These connectors are available at consumer electronics stores.

To wire the coaxial DC connector:

1. Connect the solar panel’s red positive (+) wire to the coaxial plug’s inner or centre contact.
2. Connect the solar panel’s black negative (–) wire to the plug’s outer contact. See Figure 4-1.

Figure 4-1 Typical DC Coaxial Connector Connection



Once the connector is inserted into the AC charger input socket and the solar panel is placed in the sun, the Duracell® Powerpack charges automatically just as with the AC charger. See “Recharging with the AC Charger” on page 22.

Replacing the External Fuse

The replacement fuse must be rated at 250 A, 32 V DC. See page 6 for the fuse location.

To replace the external fuse:

1. Remove the fuse cover.
2. Unscrew the two bolts on the fuse.
3. Replace the fuse. Ensure that the replacement fuse is rated at 250 A, 32 V DC and is of the same type.
4. Tighten the fuse with the two bolts.
5. Replace the fuse cover.

Recycling

Battery-Biz is committed to environmental responsibility and has established a program for recycling Duracell rechargeable battery-related products.

For instructions on how to recycle this product visit www.rbrc.org.

5 • Troubleshooting

Troubleshooting will help you identify the common problems than can occur with the Duracell® Powerpack 600. Read this chapter before contacting your dealer.

Common Problems

Buzz in Audio Equipment

Some low-quality stereo systems have inadequate internal power-supply filtering and may buzz slightly when powered by the Duracell® Powerpack. The best solution to eliminate the buzzing is to use an audio system with a better quality filter.

Television Interference

The Duracell® Powerpack is shielded to minimize interference with TV signals. If TV signals are weak, you may see interference in the form of lines scrolling across the TV screen. Try one of the following suggestions to minimize or eliminate the interference:

- Use an extension cord to increase the distance between the Duracell® Powerpack and the TV, antenna, and cables.
- Adjust the orientation of the Duracell® Powerpack, television, antenna, and cables.
- Maximize TV signal strength by using a better antenna. Use a shielded antenna cable where possible.
- Try a different TV. Different models vary considerably in their susceptibility to interference.

Troubleshooting Reference

WARNING: Electric shock hazard
Do not remove the cover of the Duracell® Powerpack or disassemble the Duracell® Powerpack except to replace the internal battery or 250 A fuse. The Duracell® Powerpack does not contain any internal user-serviceable parts and attempting to service the unit yourself could result in electrical shock or burn.

Table 5-1 Troubleshooting reference

Problem	Possible Cause	Solution
AC appliance will not operate; Audible alarm is not sounding.	AC appliance rated more than 480 W, the safety overload has tripped. AC appliance is rated less than 480 W, high starting surge has tripped the safety overload	Use an AC appliance with a power rating less than 480 W. AC appliance may exceed the unit's surge capability. Use an AC appliance with a starting surge within the Duracell® Powerpack surge rating.
Overload shutdown	Appliance power requirements exceed the capability of the Duracell® Powerpack.	Unplug the appliance and confirm that the appliance's power requirement is 480 W or less before attempting to restart the appliance.
AC appliance will not operate; audible alarm is sounding.	Battery has discharged to 10.5 V. Inverter has overheated due to poor ventilation or excessively warm environmental conditions.	Turn the AC outlet ON/OFF switch off and recharge the Duracell® Powerpack. Turn the AC outlet ON/OFF switch off and allow the Duracell® Powerpack to cool for 15 minutes or more. Clear blocked fan opening or remove objects covering the unit, then restart the Duracell® Powerpack. Move to a cooler environment.
Over-temperature shutdown	Inverter has overheated due to poor ventilation or excessively warm environmental conditions.	Turn off the AC outlet ON/OFF switch, and let the Duracell® Powerpack cool down.
Alarm sounds	Internal battery is nearly discharged.(11.0 V). If you ignore this warning, the Duracell® Powerpack automatically switches off when the battery reaches 10.5 V.	Turn the AC outlet ON/OFF switch OFF and recharge the Duracell® Powerpack.

Problem	Possible Cause	Solution
Run time is less than expected.	• Internal battery is not fully charged. • AC appliance power consumption is higher than expected.	Recharge using the AC charger, until green Charging Status light is steady. Check AC appliance power or wattage rating (or current draw for 12 V DC appliances) and compare with Table 3-1 on page 12 and Table 3-2 on page 15.
Measured AC output voltage is too low.	• Use of an average-reading AC voltmeter to read output voltage. • Battery is almost fully discharged.	The modified sine wave (MSW) output of the Duracell® Powerpack requires a true RMS reading meter, such as the Fluke 87 series, for accurate measurement. Press display function button to verify battery status and recharge the Duracell® Powerpack as necessary. Battery Charge reading is only accurate when the Duracell® Powerpack has been disconnected from all appliances and all charging sources for 15 minutes.
Charging Status light is OFF when AC charger is connected	No AC power at the AC wall outlet.	Ensure power is available at the AC wall outlet.

A • Specifications

Electrical Specifications

12 V DC Section	
Internal battery type	Sealed, AGM (Absorbed Glass Mat) lead acid
Internal battery voltage (nominal)	12 V DC
Internal battery capacity (minimum)	26 Ah
Internal battery CCA rating	280 CCA
DC power socket (maximum continuous load)	12 A with automatic reset
Jump-start cable port	50 A
Jump-start fuse (external—user replaceable)	250 A

AC Power Section	
Output power • Continuous output power • Five minute AC output power • Peak AC output surge capacity	480 W 600 W 960 W
Output voltage	115 ± 10 V AC RMS
Number of AC outlets	3
Output frequency	60 Hz
Output wave form	Modified sine wave
No load current draw	<0.4 A DC
Input voltage range	10.5 to 15.5 V DC
Low battery alarm	11.0 V DC
Low battery shutdown	10.5 V DC
High battery voltage shutdown	Yes, automatic reset
Over temperature shutdown	Yes, automatic reset
Overload shutdown	Yes, automatic reset
AC output short circuit protection	Yes, automatic reset
Operating temperature range	32–104 ºF (0–40 ºC)
Storage temperature range	32–86 ºF (0–30 ºC)

USB Power Section	
USB Ports	2 x 2.1 A

Internal Battery Charging Controller System	
AC charger bulk charging current	1.5A
Peak charging voltage (nominal)	14.2 V
Charge restart voltage (nominal)	12.9 V
Float charge after full charge is completed (nominal)	1.5 mA
AC charger input socket maximum current	2.5 A
Charging time from AC outlet	35 hours
Charging time from DC outlet	4 hours max

Accessories	
Jump-start cables	24” (0.61 m), 6 AWG wire with black and red battery clamps
DC charge cable	39” (1 m) 18 AWG with male-to-male lighter plugs
AC charger	120 V AC, 1.5 A, 60 Hz

Physical Specifications

Length	14” (36 cm)
Width	9” (22.8 cm)
Height	12” (30.4 cm)
Weight	32 lb (14.5 kg)

Important: All specifications are subject to change without notice.

B • Warranty and Return Information

Quality Guarantee

Battery-Biz guarantees the Duracell® Powerpack 600 to be free of defects due to faulty materials or workmanship. This Duracell® Powerpack 600 carries a 1-year limited warranty from the date of purchase.

If found to be defective, this Duracell® Powerpack 600 will be replaced without charge when returned to Battery-Biz. This guarantee does not apply to damage from misuse or abuse beyond normal usage. This guarantee gives you specific legal rights, and you may also have other rights which vary from state to state. Should any device be damaged by the Duracell® Powerpack 600 due to defects in the product arising from faulty materials or workmanship, Battery-Biz will repair or replace (at our option) the Duracell® Powerpack 600, provided both device and product usage instructions have been followed.

Send device with the Duracell® Powerpack 600 to:

Battery-Biz Inc.
1380 Flynn Road, Camarillo, CA 93012
Attention: Duracell Product Returns

If you would like additional information on Duracell® products, call:

1-800-842-2127 or
1-805-437-7765 (7:30 AM-4:30 PM PST).

Contacting Customer Support

If you experience any problems or have any questions regarding your Duracell® Powerpack 600, free technical support is available. Prior to calling, please review the technical support tips below.

Call from a phone where you have access to your mobile device

Be prepared to provide the following information:
- Name, address and telephone number
- Name of the DURACELL® product
- Make and model of your device
- Symptoms of the problem(s) and what led to them

Technical Support is available by telephone
U.S. and Canada (800) 842-2127
Outside of the US/Canada: (805) 437-7765

Written inquires should be directed to:
Battery-Biz Inc.
DURACELL Product Inquiry
1380 Flynn Road,
Camarillo, CA 93012, USA

Warranty and Return

One Year Limited Warranty

The Duracell® Powerpack 600 carries a limited warranty against defects in material and workmanship under normal use and service for one year from the original date of purchase. The manufacturer or distributor, at its option, shall repair or replace the defective unit covered by this warranty. Please retain the dated sales receipt as evidence of the date of purchase as it will be required for any warranty service. In order to keep the warranty in effect, the product must have been handled and used as described in the instructions accompanying this warranty. This warranty does not cover any damage due to accident, misuse, abuse or negligence.

Disclaimer Of Warranty
The limited warranty described herein is your sole remedy. To the extent permitted by law, the manufacturer and distributor disclaim all other implied or express warranties including all warranties of merchantability and/or fitness for any particular purpose.

Limitation Of Liability
Except to the extent of repairing or replacing this product as expressly stated in the limited warranty described herein, the manufacturer and distributor shall not be liable for any damages, whether direct, indirect, incidental, special, consequential, exemplary, or otherwise, including lost revenues, lost profits, loss of use of software, loss or recovery of data, rental of replacement equipment, downtime, damage to property, and third-party claims, arising out of any theory of recovery, including statutory, contract or tort. Not withstanding the term of any limited or implied warranty, or in the event that any limited warranty fails of its essential purpose, in no event will the manufacturer's and distributor's entire liability exceed the purchase price of this product. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages so the above limitations or exclusions may not apply to you. This limited warranty gives you specific legal rights. You may have other rights which vary from state to state and province to province.

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